

REMARKS / ARGUMENTS

The action by the Examiner in this application, together with the references cited, has been given careful consideration. Following such consideration, claim 1 has been amended to define more clearly the patentable invention Applicant believes is disclosed herein. It is respectfully requested that the Examiner reconsider the claims in their present form, together with the following comments, and allow the application.

As the Examiner well knows, the present invention is directed to a sanitizable float valve apparatus. The valve apparatus includes a valve body defining a valve cavity. A fluid inlet and a fluid outlet are formed in the valve body and both are in fluid communication with the valve cavity. The fluid inlet is disposed in the valve body above the valve cavity. The fluid outlet is disposed in the valve body and extends radially from the valve cavity. A closing element is disposed in the valve body to move vertically within the valve cavity. The closing element has a front surface and a rounded lower end opposite the front surface. The rounded lower end is dimensioned to engage the surface of a guide cam, i.e., a contact surface, at a point. A float is connected to the guide cam to control the movement thereof. The closing element and valve cavity are dimensioned to create an *allowance* between the valve cavity and the closing element.

During operation of the present invention, fluid enters the valve body through the fluid inlet. A majority of the fluid flowing through the valve body exits through the fluid outlet when the closing element is in an open position. A small portion of the fluid flowing through the valve body exits downwardly through the allowance between the closing element and the valve cavity and flushes the rounded lower end of the closing element. In this respect, *only a small portion* of the fluid flowing through the valve apparatus is used to flow over the closing element to remove any impurities thereon. More specifically, impurities that may be between the closing element

and the valve cavity and impurities that may be on the rounded lower end of the closing element are removed by the small portion of fluid flowing through the allowance.

The present invention also defines a closing element that has a rounded lower end. As the closing element moves vertically within the valve cavity, the float engages the closing element at various points along the rounded lower end of the closing element. In this respect, the point of engagement between the float and closing element moves along the surface of the rounded lower end thereby allowing the *entire rounded lower end* of the closing element to be flushed of impurities by the small portion of fluid flowing over the closing element. The present invention therefore provides a valve apparatus wherein all the surfaces of a closing element disposed in a valve chamber may be sanitized.

In response to the Examiner's rejections, claim 1 has been amended to define more clearly the patentable invention Applicant believes is disclosed herein. In this respect, claim 1 has been amended to define that a closing element moves vertically within the valve chamber. The closing element has a rounded lower end that is dimensioned to engage a contact surface of a float at a point such that as the closing element moves within the valve chamber, the point of contact between the closing element and the float moves along the surface of the rounded lower end. The valve chamber and the closing element are dimensioned such that a part of the fluid exits downwardly through an allowance between the closing element and the valve chamber to flush the rounded lower end of the valve element. In other words, amended claim 1 defines that fluid exits the valve through two paths when the valve is open, i.e., a portion of the fluid exits downwardly through the allowance to flush impurities from the rounded lower end of the closing element *and* majority of the fluid exits through the fluid outlet. It is respectfully submitted that the cited reference does not disclose a structure as described in the claims in their present form.

Claims 1-4 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,351,713 to Lin. The '713 patent to Lin discloses a stopper seat 35 that is disposed in a stop valve 31. A stopper head 36 is attached to the bottom of stopper seat 35. Stopper head 36 is provided to control the flow of water through stop valve 31. As shown in Figure 8A, the upper portion of stopper seat 35 is flat. It is respectfully submitted that the '713 patent to Lin does not teach, suggest or show a closing element having a rounded lower end wherein part of the fluid exiting the valve flows downwardly through an allowance, to flush the rounded lower end of the closing element.

Claims 1-4 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,324,878 to Dill. The '878 patent discloses a valve element 8 disposed in a valve 1, as best seen in FIG. 1. Valve element 8 is moveable in a lateral direction such that fluid exiting water supply pipe 5 flows sideways across valve element 8 and then downward through discharge passage 7. In this respect the '878 patent to Dill does not teach, suggest or show a structure having a closing element with a rounded lower end wherein the fluid exiting downwardly past the closing element flushes impurities that may be disposed in the rounded lower end of the closing element, as presently defined in claim 1 of the present invention.

Claims 2-5 depend from claim 1 and should be allowed for at least the same reasons stated above for claim 1.

Claim 5 stands rejected under 35 U.S.C. Section 103(a) as being unpatentable over the '713 patent to Lin or the '878 patent to Dill, both in view of U.S. Patent No. 2,793,654 to Bierman.

The '654 patent to Bierman discloses a float valve made of PTFE. Applicant respectfully submits that the '654 patent to Bierman does not disclose the deficiencies noted above regarding either the '713 patent to Lin or the '878 patent to Dill.


In view of the foregoing, it is respectfully submitted that independent claim 1 is patentable over the cited references. Furthermore, the remaining claims depend from independent claim 1. Therefore, it is respectfully submitted that these claims are likewise patentable over the cited references for at least the reasons set forth above in connection with independent claim 1.

In view of the foregoing, it is respectfully submitted that the present application is now in proper condition for allowance. If the Examiner believes there are any further matters which need to be discussed in order to expedite the prosecution of the present application, the Examiner is invited to contact the undersigned.

If there are any fees necessitated by the foregoing communication, please charge such fees to our Deposit Account No. 50-0537, referencing our Docket No. ST9175PCT(US).

Respectfully submitted,

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